UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,068	09/25/2003	Wilson Y. Liao	INTCP004	5861

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EXAMINER
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ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/671,068	LIAO ET AL.	
	Examiner	Art Unit	
	MOUNIR MOUTAOUAKIL	2619	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 January 2008</u>.
2a) ☒ This action is FINAL.   2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-20</u> is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-20</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a) ☐ All   b) ☐ Some * c) ☐ None of:
        1. ☐ Certified copies of the priority documents have been received.
        2. ☐ Certified copies of the priority documents have been received in Application No. _____.
        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail. Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20080421

DETAILED ACTION

The amendment filed on 01-08-2008 has been entered and considered.

Claims 1-20 are pending.

Claims 1-20 remain rejected as discussed below.

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

2.   Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

3.   Claim 1, line 13. The recitation of "the data buffer" is confusing because it is not

clear to which data buffer it refers back to.

Claims 2-9 are rejected because they depend on rejected claim.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

5.   Claims 1, 4-7, 9-11, 13-19 are rejected under 35 U.S.C. 102(b) as being

anticipated by Gaddis et al (US 5,815,501). Hereinafter referred to as Gaddis.

Regarding claim 1. Gaddis discloses an ATM-Ethernet network system (see

figure 1). The system comprises an ATM processor (see figure 3, ATM cell processor);

an Ethernet network processor (see figure 3, Ethernet controller); and an ATM-Ethernet processor interfacing between the ATM processor and the Ethernet network processor (see figure 1, ATM-Ethernet portal, also see figure 3, which is a schematic block diagram of the ATM Ethernet portal hardware architecture, see the control microprocessor). The ATM-Ethernet processor includes a packet buffer pointer ring for managing traffic from the Ethernet network processor to the ATM processor the packet buffer pointer ring to contain a plurality of ATM processor packet buffer pointers (See figure 3 and column 5, lines 25-67. the system manages and controls frames traffic) each including a memory address in a data buffer of the ATM (see col.4, lines 39-64, the system defines specific VCI and VPI for the outgoing cells to the ATM network) , a packet descriptor ring and a data buffer for managing traffic from the ATM processor to the Ethernet network processor, the packet descriptor ring being configured to contain a plurality of packet descriptors each including an ATM-Ethernet packet buffer memory address in the data buffer (See figure 3 and column 5, lines 25-column 6 lines 17. packet descriptor is used to manage the cell flow from the ATM network to Ethernet network).

Regarding claim 4. Gaddis discloses a system where the packet buffer pointer ring is hardware scalable in size (see figure 3, see column 5 lines 1-24. where all of the elements implemented are hardware scalable in size).

Regarding claim 5. Gaddis discloses a system where the packet buffer pointer ring is a hardware FIFO to contain packet buffer pointers that point to packet buffer memory locations in the memory of the ATM processor (see figure 4 and see column 6,

lines 1-16. the packet buffer pointer is a hardware FIFO, and points to packet buffer memory location of the ATM processor).

Regarding claims 6 and 14. Gaddis discloses a system where each packet buffer pointer contains a flag to signal to the ATM-Ethernet processor hardware whether the packet buffer pointer is being used (see column 5, lines 25-46. the DMA controller is used to flag the ATM-Ethernet microprocessor whether new cells have arrived).

Regarding claim 7. Gaddis discloses a system where each packet buffer pointer points to a packet buffer memory location in a memory of the ATM processor (see column 6 lines 1-17. the system points to a packet buffer memory location in a shared memory of the ATM processor).

Regarding claims 9 and 15. Gaddis discloses a system where the packet buffer pointer ring and the packet descriptor ring are implemented as circular FIFOs (see figure 4).

Regarding claim 10. Gaddis discloses a method for data communication. The method for data communication comprises receiving a packet from a network processor by an ATM-Ethernet processor for transmission to an ATM processor (see figure 3); fetching a packet buffer pointer from a packet buffer pointer ring of the ATM-Ethernet processor, the packet buffer pointer including a memory address pointing to a packet buffer memory location in a data buffer memory of the ATM processor; and transmitting the fetched packet buffer pointer and the received packet to the ATM processor (See col.3, lines 16-67, col.4, lines 39-64, and col.5, lines 54-67).

Regarding claim 11. The method of Gaddis further comprises identifying the

memory in the ATM processor to which the memory address in the fetched packet

buffer pointer points by the ATM processor; storing the packet to the memory identified

in the ATM processor; and returning the packet buffer pointer to the ATM-Ethernet

processor for reuse (see column 5, lines 54-67. the microprocessor manages the cells

by locating, storing and transmitting the cells to the memory locations assigned.

Moreover, pointers are received to be recycled).

Regarding claim 13. Gaddis discloses a method where the packet buffer pointer

ring of the ATM-Ethernet processor is hardware scalable in size (see figure 3, see

column 5 lines 1-24. where all of the elements implemented are hardware scalable in

size).

Regarding claim 16. Gaddis discloses a method for data communication. The

method comprises: receiving a packet from an ATM processor by an ATM-Ethernet

processor for transmission to a network processor; storing the packet in a data buffer of

the ATM-Ethernet processor; storing a packet descriptor for the packet in a packet

descriptor ring of the ATM-Ethernet processor, the packet descriptor including a pointer

to a memory location in the data buffer to which the packet is stored; analyzing the

packet descriptor for error; and if error is detected: dropping the packet descriptor;

reporting error to the ATM processor; if no error is detected: fetching the packet from

the data buffer of the ATM-Ethernet processor; and transmitting the packet to the

network processor (See col.3, lines 16-67, col.4, lines 39-64, col.5, lines 54-67, and

col.6, lines 1-17).

Regarding claim 17. The method of Gaddis further comprises returning the
packet descriptor to the packet descriptor ring for reuse (see column 6, lines 15-17).

Regarding claim 18. Gaddis discloses a method where the packet descriptor ring
of the ATM-Ethernet processor is hardware scalable in size (see column 5, lines 14-24.
and see figure 3).

Regarding claim 19. Gaddis discloses a method where the packet descriptor ring
is implemented in the ATM-Ethernet processor as a circular FIFO (see figure 4).

Claim Rejections - 35 USC § 103

6.   This application currently names joint inventors. In considering patentability of
the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of
the various claims was commonly owned at the time any inventions covered therein
were made absent any evidence to the contrary. Applicant is advised of the obligation
under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was
not commonly owned at the time a later invention was made in order for the examiner to
consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)
prior art under 35 U.S.C. 103(a).

7.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148
USPQ 459 (1966), that are applied for establishing a background for determining
obviousness under 35 U.S.C. 103(a) are summarized as follows:

        1.   Determining the scope and contents of the prior art.
        2.   Ascertaining the differences between the prior art and the claims at issue.
        3.   Resolving the level of ordinary skill in the pertinent art.
        4.   Considering objective evidence present in the application indicating
                obviousness or nonobviousness.

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gaddis in view of Vogel (US 6,075,788).

        Regarding claim 2. Gaddis discloses an ATM data processor, which is an ATM I2

processor.

        Regarding claim 2 and 12. The system of Gaddis discloses all the limitations of

claims 1 and 10. Gaddis does not disclose that the ATM processor is in communication

with the SONET framer. However, Vogel discloses a method of communicating ATM

network and SONET network (See column 2, lines 62-67). Thus, it would have been

obvious to the person of ordinary skill in the art at the time of the invention to add a

SONET framer, as suggested by Vogel, to communicate with the ATM processor in

order to receive ATM cells and load them into synchronous payload envelopes (SPE)

forming SONET frames.

10.   Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaddis.

        Regarding claim 3. Gaddis discloses all the limitations of claim 1.

        Gaddis does not comprise an Ethernet MAC in communication with the Ethernet

network processor. However, the examiner takes official Notice that it is well known in

the art to have an Ethernet network processor in communication with an Ethernet MAC

to provide services to clients or local area networks.

11.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaddis in

view Yoaz et al (US 2004/0215934). Hereinafter referred to as Yoaz.

        Gaddis discloses using descriptors as pointers to manage the conversion form

the Ethernet controller to the ATM cell processor.

        Gaddis does not disclose that the packet pointer contains 16 bits, 15 of which

being for a pointer to point to a packet buffer memory location in a memory of the ATM

processor. However Yoaz discloses a system where the packet pointer contains 16 bits

(see paragraph 18). Thus, it would have been obvious to the person of ordinary skill in

the art at the time of the invention to implement the packet pointer of Gaddis using 16

bits, of which 1 bit can be used as a flag and the rest can be used as address location,

as suggested by Yoaz. Moreover, long pointer has the advantage of greater memory

location access than a shorter length pointer.

12.   Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaddis

in view of Rozario et al (US 6,618,793). Hereinafter referred to as Rozario.

        Gaddis discloses the use of packet descriptors.

        Gaddis does not disclose that packet descriptor contain 8 bytes (64 bits) (see

column 4, lines 5-12). However, Rozario discloses a packet descriptor containing 8

bytes. Thus, it would have been obvious to the person of ordinary skill in the art at the

time of the invention to use 8-byte packet descriptor to indicate the location in a
memory.

Response to Arguments

13.   Applicant's arguments filed 01-08-2008 have been fully considered but they are
not persuasive.

14.   Applicants argue that the prior art of record fails to teach that the incoming
packets' pointers indicate a memory location/address in the ATM processor memory.

15.   Examiner respectfully disagrees, the prior art of record, Gaddis et al, discloses
an ATM-Ethernet portal, which connect Ethernet segments to an ATM network. the
portal provides the following benefits: each Ethernet frame transmitted on any of the
Ethernet segments is fragmented into a sequence of ATM cells, which are then
transmitted by the local portal over the ATM network and delivered to the
interconnected portals, and when ATM cells are received, the portals reassemble the
cells into Ethernet frames, then transmit the frames over their Ethernet segments.
During the segmentation from Ethernet frames to ATM Cells, the portal generates, from
the received frame, a header that specifies precise VCI/VPI identifiers. Therefore, it is
believed the portal includes memory address pointing to specific port/destination/queue
in the ATM network (see col.4, lines 39-64, Figs. 2 and 6).

Conclusion

16.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Examiner has cited particular columns and line numbers in the references

applied to the claims above for the convenience of the applicant. Although the specified

citations are representative of the teachings of the art and are applied to specific

limitations within the individual claim, other passages and figures may apply as well. It is

respectfully requested from the applicant in preparing responses, to fully consider the

references in entirety as potentially teaching all or part of the claimed invention, as well

as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully

requested to indicate the portion(s) of the specification which dictate(s) the structure

relied on for proper interpretation and also to verify and ascertain the metes and bounds

of the claimed invention.

When responding to this office action, applicants are advised to clearly point out

the patentable novelty which they think the claims present in view of the state of the art

disclosed by the references cited or the objections made. Applicants must also show

how the amendments avoid such references or objections. See 37C.F.R 1.111(c). In addition, applicants are advised to provide the examiner with the line numbers and pages numbers in the application and/or references cited to assist examiner in locating the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOUNIR MOUTAOUAKIL whose telephone number is (571)270-1416. The examiner can normally be reached on Monday-Thursday (1pm-4: 30pm) eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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